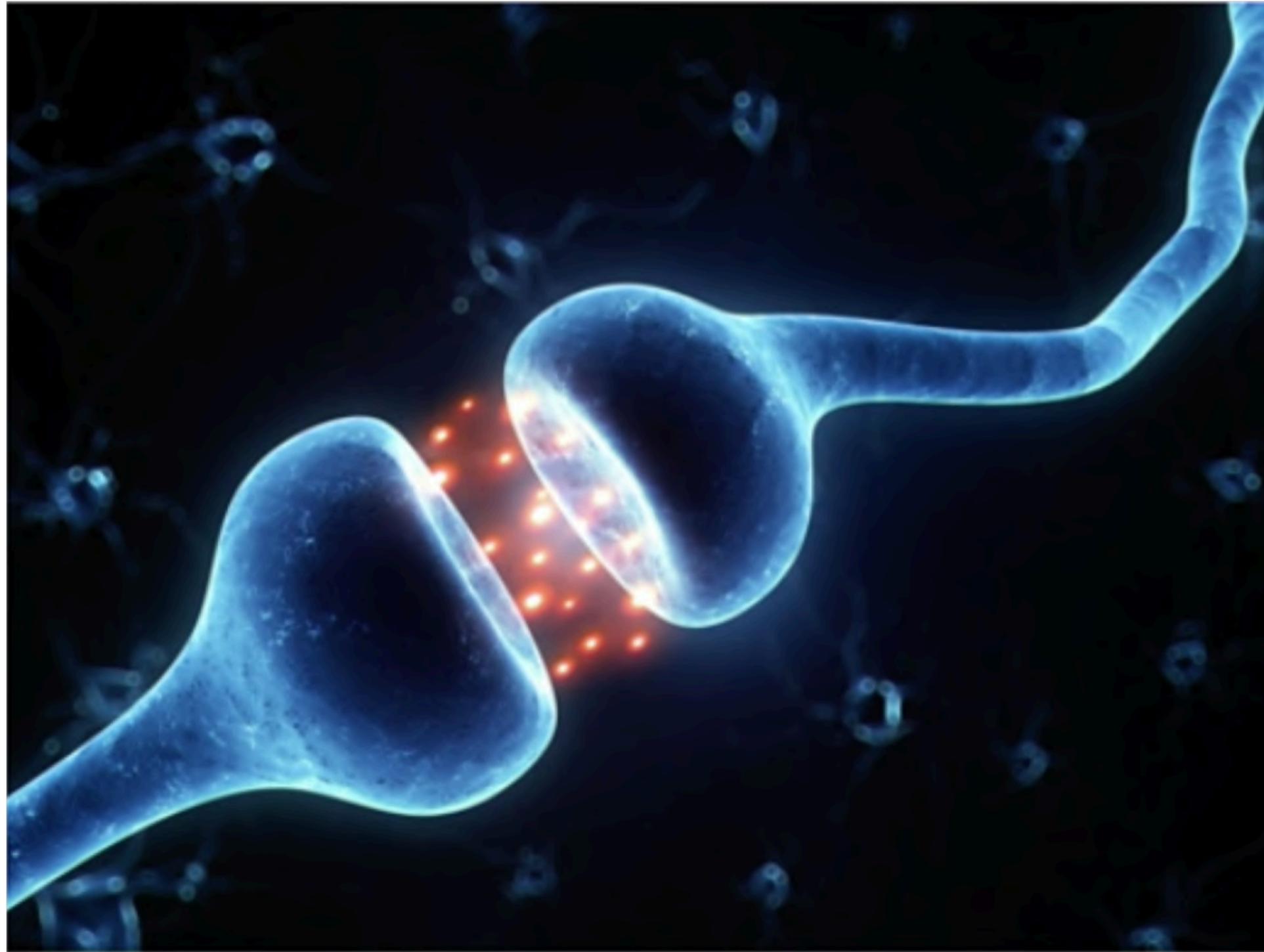


INTELIGENCIA ARTIFICIAL EN QSERVUS



REDES NEURONALES

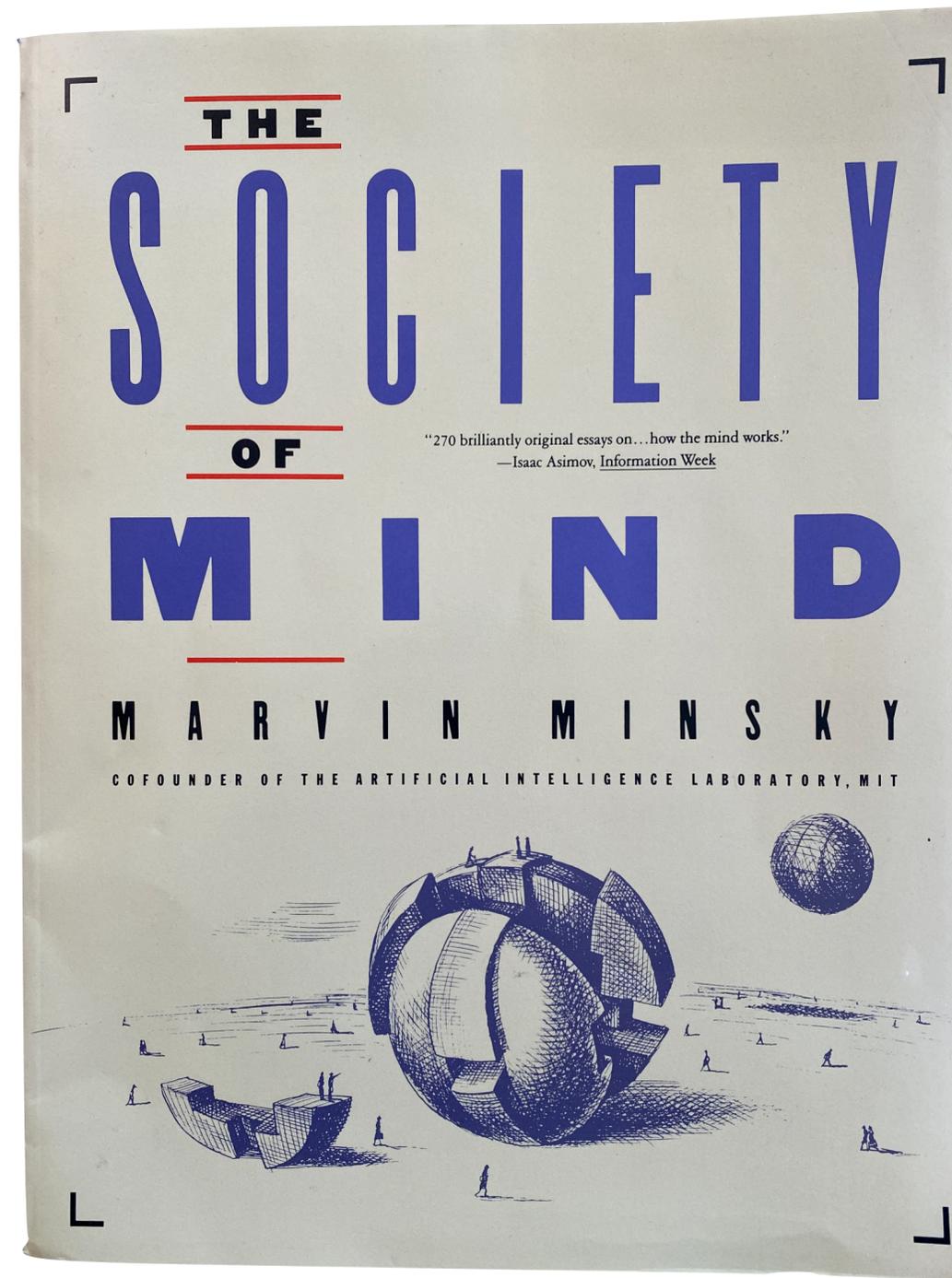


MARVIN MINSKY



- Laboratorio de Inteligencia Artificial en MIT.
- 1951: SNARC: Primer simulador de redes neuronales.

LA SOCIEDAD DE LA MENTE



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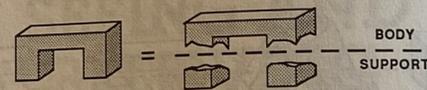
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LA SOCIEDAD DE LA MENTE

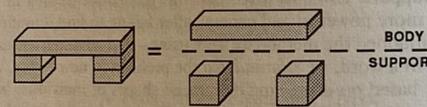
13.2 BOUNDARIES

*In the sky there is no distinction of east and west;
people create distinctions out of their own minds and then
believe them to be true.*
—BUDDHA

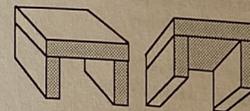
What is creativity? How do people get new ideas? Most thinkers would agree that some of the secret lies in finding "new ways to look at things." We've just seen how to use the Body-Support concept to reformulate descriptions of some spatial forms, and soon we'll see some other ways to reformulate in terms of strength, containment, cause, and chain. But first let's look more carefully at how we made those four different arches seem the same, by making each of them seem to match "a thing supported by two legs." In the case of *Single-Arch*, we did this by imagining some boundaries that weren't really there: this served to break a single object into three.



However, we dealt with *Tower-Arch* by doing quite the opposite: we treated some real boundaries as though they did not exist.



How cavalier a way to treat the world, to see three different things as one and to represent one thing as three! We're *always* changing boundaries! Where does an elbow start or end? When does a youth become an adult? Where does an ocean change into a sea? Why must our minds keep drawing lines to structure our reality? The answer is that unless we made those mind-constructed boundaries, we'd never see any "thing" at all! This is because we rarely see anything twice as exactly the same. Each time we're almost certain to be looking from a somewhat different view, perhaps from nearer or farther, higher or lower, in a different color or shade of light, or against a different background. For example, consider these two appearances of the same table.



*These are quite different when described
in terms of the actual lines and surfaces.
But when described in terms of body and
support, both pictures are the same!*

Unless the mind could thus discard the aspects of each scene that are not essential to its present purposes, we could never learn anything. Otherwise, our recollections would rarely match appearances. Then nothing could make any sense—since nothing would seem permanent.

13.3 SEEING AND BELIEVING



A child was asked to draw a person.

Where is the body? Why are the arms and legs connected to the head?

When questioned, many young children actually prefer these to the drawings most adults like.

We normally assume that children see the same as we do and only lack our tricky muscle skills. But that doesn't explain why so many children produce this particular kind of drawing, nor why they seem so satisfied with them. In any case, this phenomenon makes it seem very unlikely that a child has a realistic, picturelike "image" in mind.

Now let's consider a different idea. We'll suppose that the child does not have anything like a picture in mind, but only some network of relationships that various "features" must satisfy. For example, a child's "person-drawing" feature-network might consist of the following features and relations:

- HEAD Large closed figure.
- EYES Two circles, high in head.
- MOUTH Object centered below eyes.
- BODY Large closed figure.
- ARMS Two lines, attached high on body.
- LEGS Two lines, attached low on body.

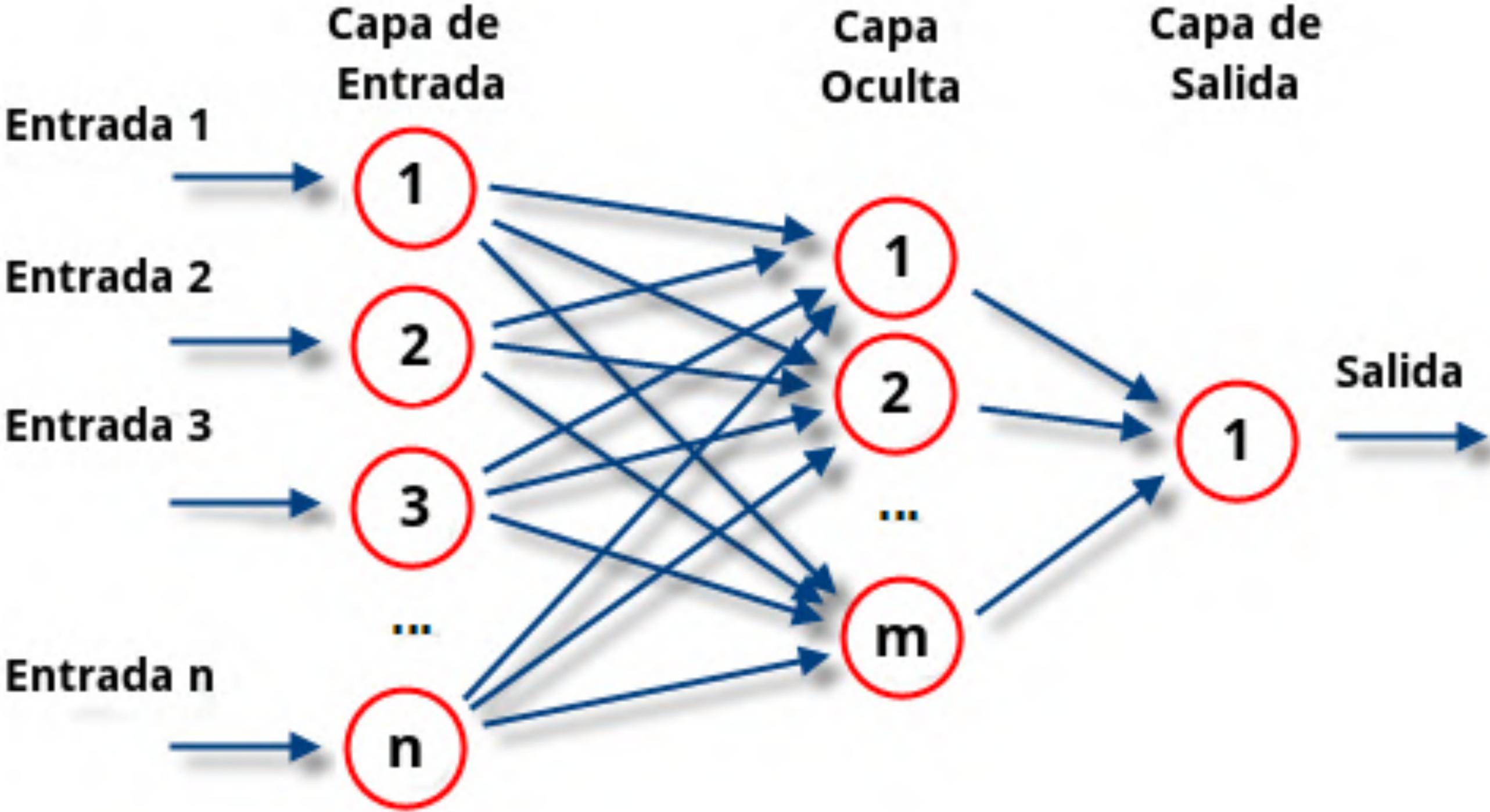
To convert this description into an actual drawing, the child must employ some sort of "drawing procedure." Here's one in which the process simply works its way down the feature list, like a little computer program:

1. Consider the next feature on the list.
2. IF such a feature is already drawn, go to step 3. Otherwise draw it.
3. IF list is finished, stop. Otherwise, go back to step 1.

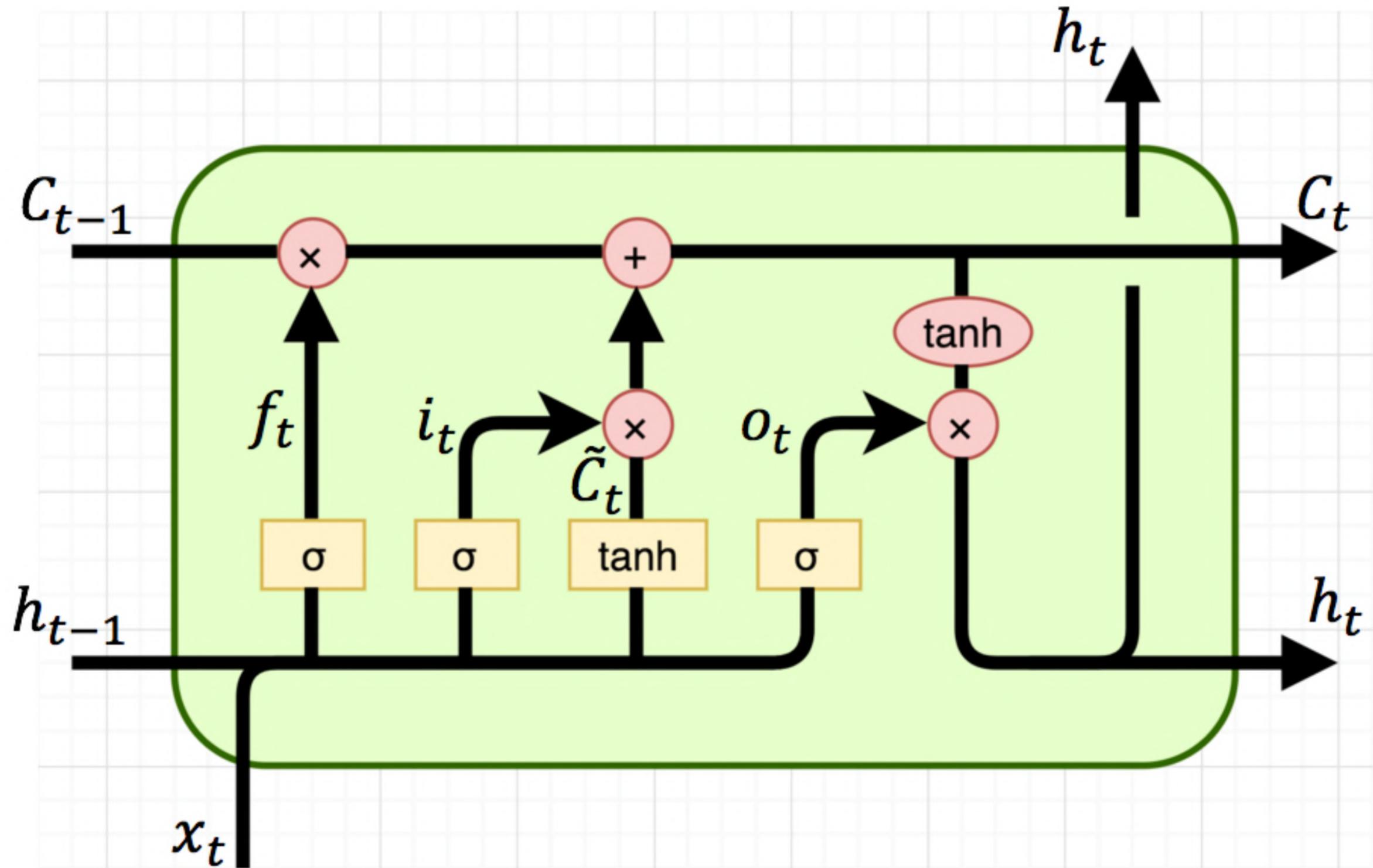
When the child starts to draw, the first item on the list is "large closed figure." Since there isn't any such thing yet, the child draws one: that's the head. Next the eyes and mouth get drawn. But then, when it comes to drawing the body feature, step 2 of the procedure finds that a "large closed figure" has already been drawn. Accordingly, nothing new is required, and the procedure simply advances to step 3. As a result, the child goes on to attach the arms and legs to the feature that has been assigned to both the body and the head.

An adult would never make such a "mistake," since once some feature has been assigned to represent a head, that feature is thereafter regarded as "used up" or "occupied" and cannot represent anything else. But the child has less capacity or inclination for "keeping track." Accordingly, since that "large closed figure" satisfies the description's requirements for both the head and the body—albeit at different moments of time—there is no cause for discontent. The little artist has satisfied all the conditions required by its description!

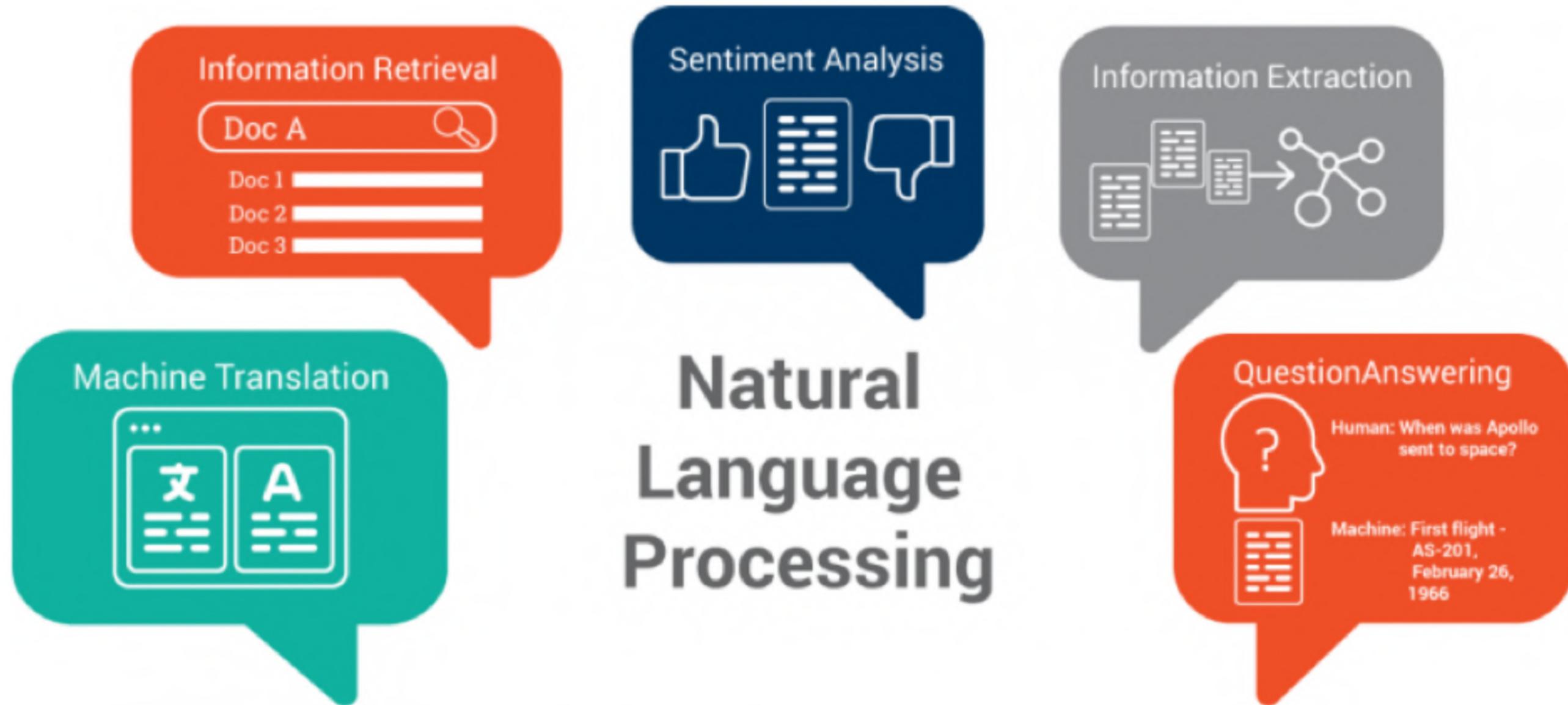
REDES NEURONALES ARTIFICIALES



REDES NEURONALES



PROCESAMIENTO DE LENGUAJE NATURAL



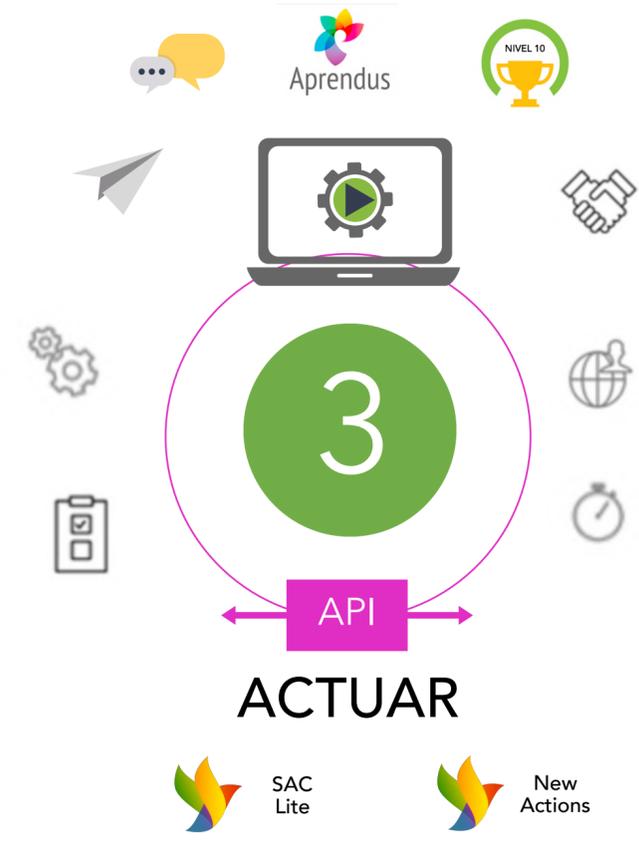
QSERVUS: REAL TIME FEEDBACK



OMNISCANAL



TIEMPO REAL



AUTOMÁTICAMENTE

RANKINGS

ILUSTRATIVO

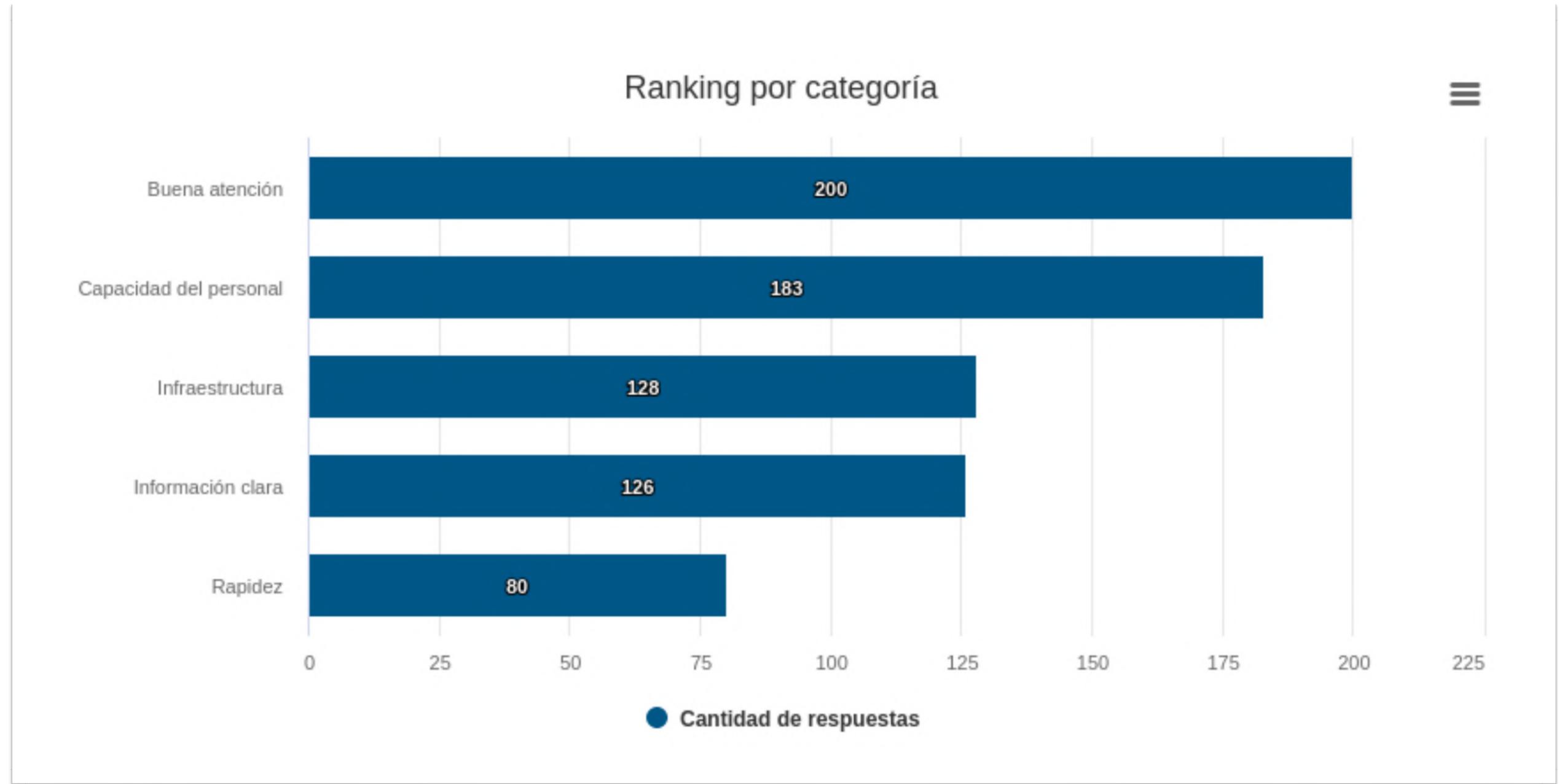
Arquitectura personalizable de Deep Learning
Categorización de comentarios de texto.

1

ANALIZAR

2

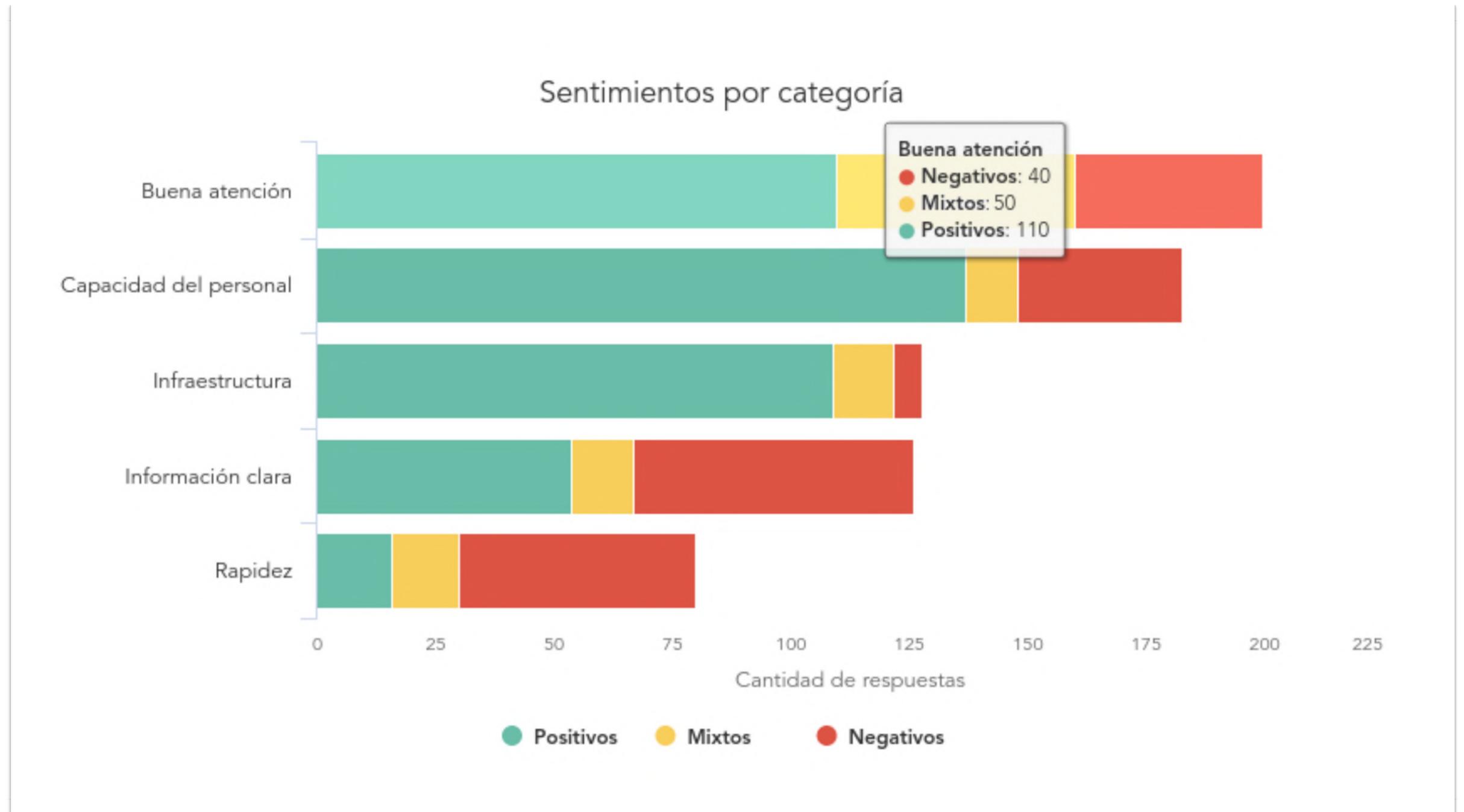
3



ANÁLISIS DE SENTIMIENTOS

ILUSTRATIVO

Arquitectura personalizable de Deep Learning



NUBES DE FRASES

ILUSTRATIVO

Arquitectura personalizable de Deep Learning

ANALIZAR

1

2

3



DEEP LEARNING

ILUSTRATIVO

Arquitectura personalizable de Deep Learning
Categorización de comentarios de texto y análisis de sentimientos.

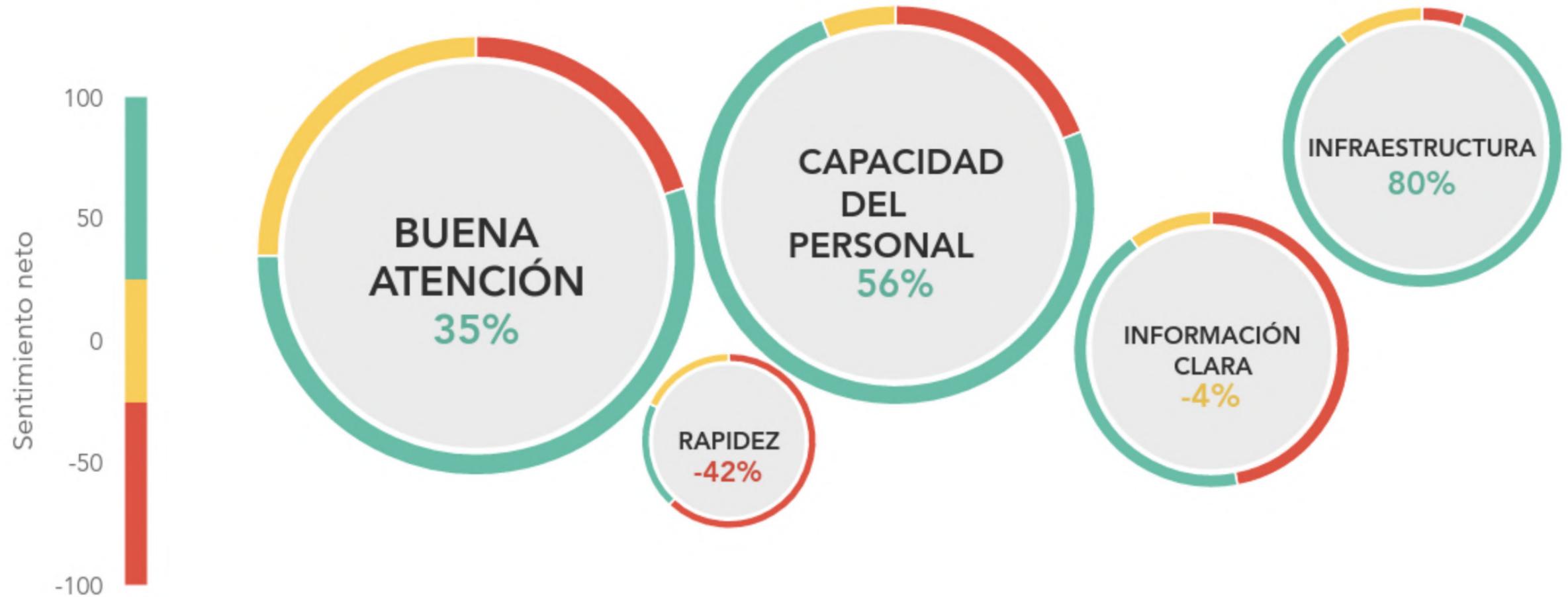
1

ANALIZAR

2

3

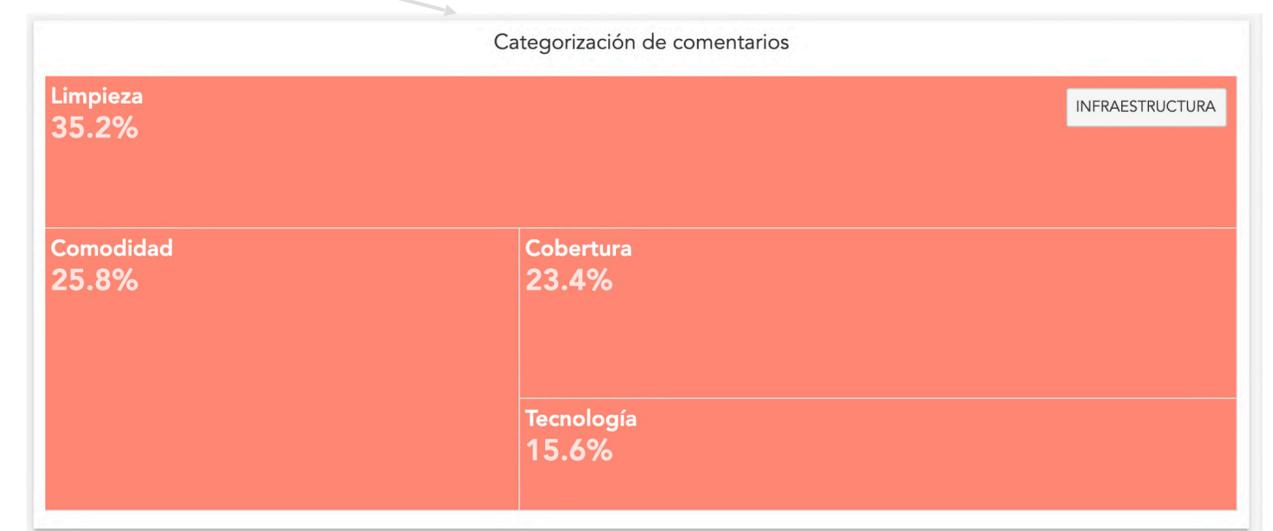
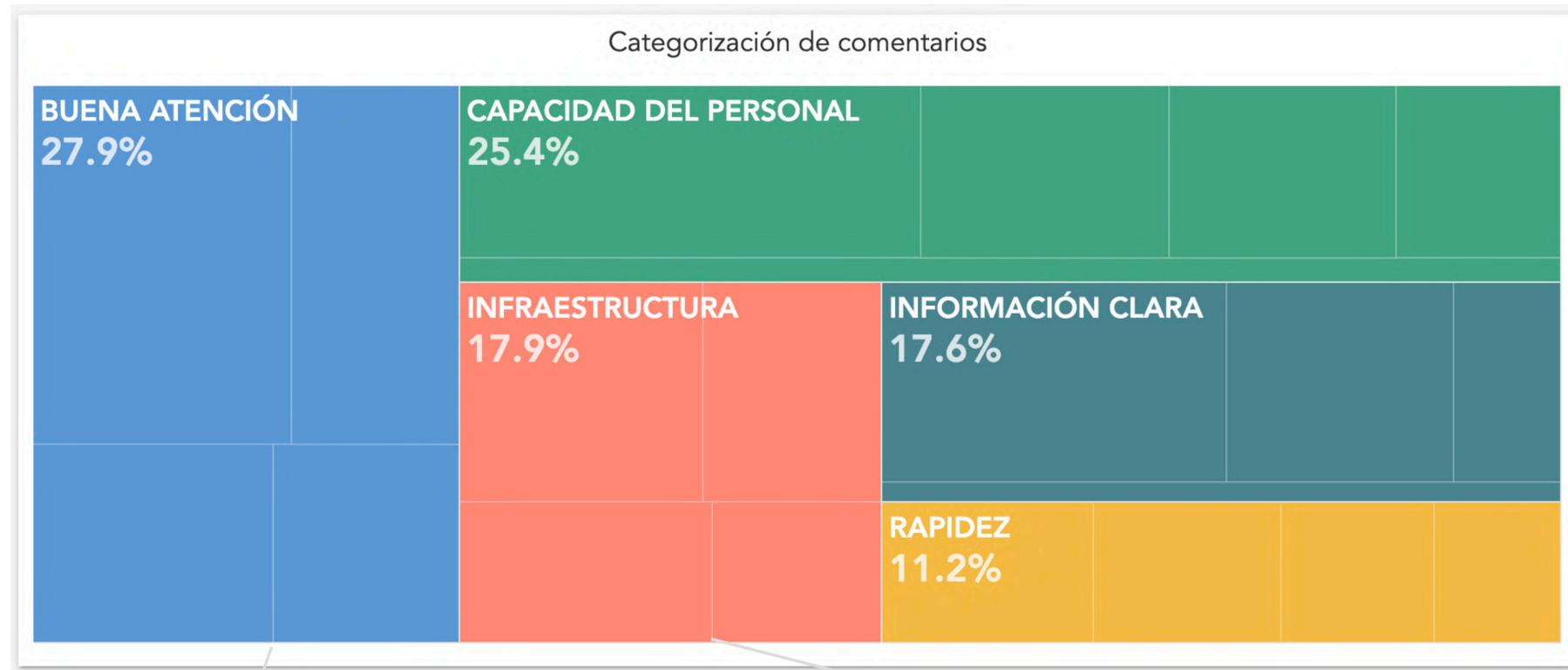
Sentimiento neto por categoría



CATEGORIZACIONES AUTOMÁTICAS

ILUSTRATIVO

Arquitectura personalizable de Deep Learning
Categorización de comentarios de texto.



1

ANALIZAR

2

3

IMPULSORES DE SATISFACCIÓN

ILUSTRATIVO

Regresiones logísticas en la nube

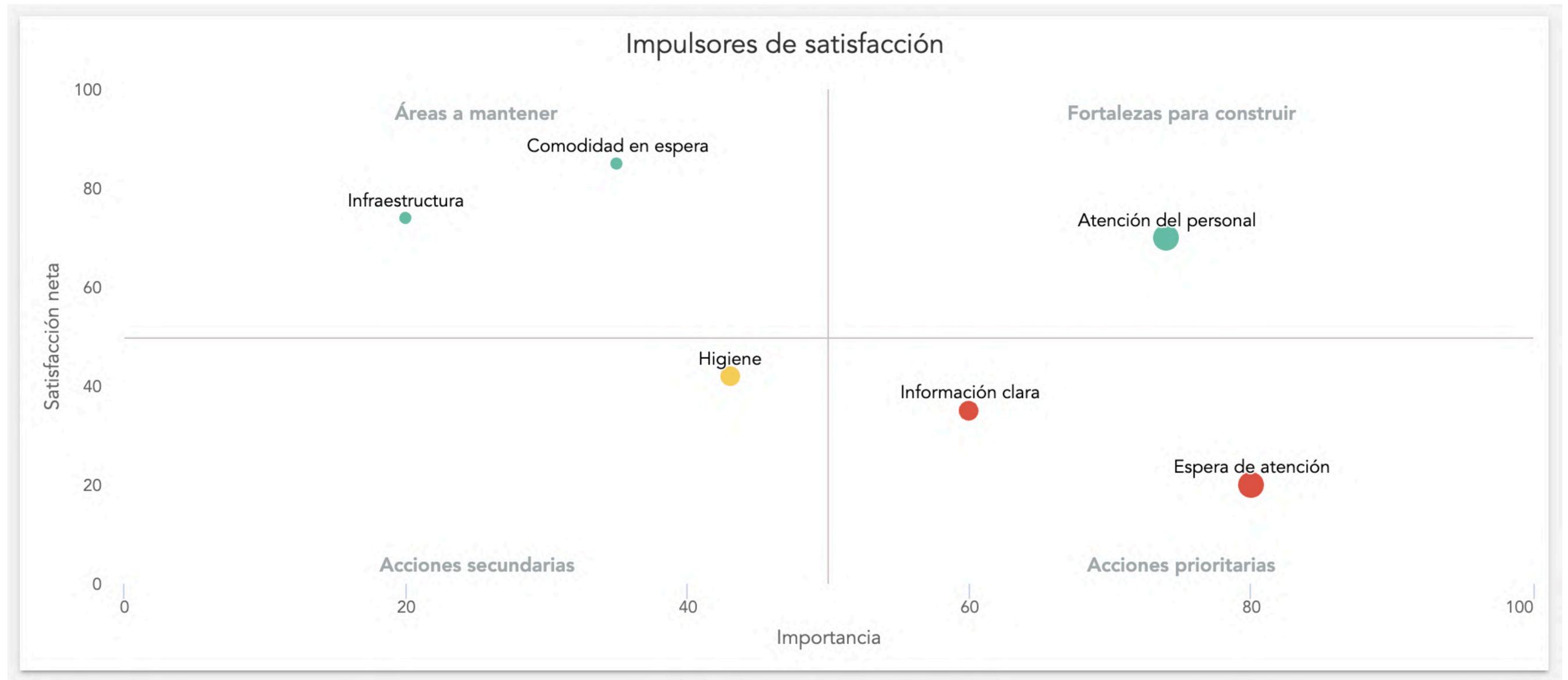
Propuesta de focos de acción considerando importancia y nivel de satisfacción de atributos

1

ANALIZAR

2

3



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